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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	PATENT
	:	
Jan TUMA	:	
	:	
Serial No.: 10/577,233	:	Art Unit: 1744
	:	
Filed: April 26, 2006	:	Examiner: A. A. Abraham
	:	
For: PROCESS FOR CREATING	:	Appeal No. _____
ADHESION ELEMENTS ON A	:	
SUBSTRATE MATERIAL	:	

BRIEF ON APPEAL

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	PATENT
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Jan TUMA	:	
	:	
Serial No.: 10/577,233	:	Art Unit: 1791
	:	
Filed: April 26, 2006	:	Examiner: A. A. Abraham
	:	
For: PROCESS FOR CREATING	:	Appeal No. _____
ADHESION ELEMENTS ON A	:	
SUBSTRATE MATERIAL	:	

APPELLANT BRIEF
ON APPEAL UNDER 37 C.F.R. §41.37

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

For the appeal to the Board of Patent Appeals and Interferences from the decisions dated September 28, 2010 and December 13, 2010 of the Primary Examiner twice and finally rejecting claims 10, 14, 16, 18, 20-22, 26, 28, 30, 32-34, 38, 40, 42 and 44-51 in connection with the above-identified application, Applicant-Appellant submits the following brief in accordance with 37 CFR §41.37.

1. Real Party in Interest

The inventor, Jan Tuma, assigned his entire rights, titles and interests in the patent application to Gottlieb Binder GmbH & Co. KG of Holzgerlingen, Germany.

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2. Related Appeals and Interferences

There are no other related appeals or interferences known to Appellant, Appellant's legal representative, or assignees, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

3. Status of Claims

Claims 1-9, 11-13, 15, 17, 19, 23-25, 27, 29, 31, 35-37, 39, 41 and 43 are cancelled. Claims 10, 14, 16, 18, 20-22, 26, 28, 30, 32-34, 38, 40, 42 and 44-51 are pending, are rejected, and are on appeal.

4. Status of Amendments

Subsequent to the September 28, 2010 Office Action containing the final rejection, an October 27, 2010 Amendment was filed that amended the specification and claims 10, 22, 34, 46, 48 and 50. A December 13, 2010 Advisory Action entered and considered the October 27, 2010 Amendment, withdrew the rejections under 35 U.S.C. §112, first and second paragraphs, but maintained the rejections under 35 U.S.C. § 103.

5. Summary of Claimed Subject Matter

Independent claim 10 recites a process for producing adhesion elements 16-18 on a substrate 10 (p. 6 lines 17-18; p. 7, lines 4-8 and 22-26, Figs. 1 and 3-6). The process comprises steps of introducing thixotropic plastic material of polyvinyl siloxane into mold cavities 12 in at least one shaping element 5 (p. 6, line 19 – p. 7, line 21; p. 9, lines 10-12; Fig. 1). Each of the mold cavities 12 has a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path (p. 7, lines 16-17; Fig. 2). Each convex path has a curvature

with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end (p. 7, lines 22-26; Fig. 2). The plastic material is formed into at least 16,000 adhesion elements 16-18 with flared ends 16 per cm^2 accomplishing adhesion predominantly by van-der-Waals forces (p. 10, line 1-19; Figs. 1 and 3-6). The flared ends 16 are formed at the inner ends of the mold cavities, with the flared ends forming head 16 (p. 7, lines 9-21; Figs. 1-6). The adhesion elements have stem parts 17 with ends being formed at the outer ends of the mold cavities and being opposite the flared ends 16, with a height from 50 μm to 150 μm and with a diameter from 10 μm to 40 μm . The flared ends 16 have a diameter from 15 μm to 70 μm (p. 9, line 24 – p. 10, line 19; Figs. 1-6). The heads 16 are formed with essentially flat end surfaces 22 (p. 10, lines 13-16; Fig. 4).

Independent claim 22 recites a process for producing adhesion elements 16-18 on a substrate 10 (p. 6 lines 17-18; p. 7, lines 4-8 and 22-26, Figs. 1 and 3-6). The process comprises steps of introducing thixotropic plastic material of polyvinyl siloxane into mold cavities 12 in at least one shaping element 5 (p. 6, line 19 – p. 7, line 21; p. 9, lines 10-12; Fig. 1). Each of the mold cavities 12 has a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path (p. 7, lines 16-17; Fig. 2). Each convex path has a curvature with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end (p. 7, lines 22-26; Fig. 2). The plastic material is formed into at least 16,000 adhesion elements 16-18 with flared ends 16 per cm^2 accomplishing adhesion predominantly by van-der-Waals forces (p. 10, line 1-19; Figs. 1 and 3-6). The flared ends 16 are formed at the inner ends of the mold cavities, with the flared ends forming head 16 (p. 7, lines 9-21; Figs. 1-6). The adhesion elements have stem parts 17 with ends being formed at the outer ends of the mold cavities and being opposite the flared ends 16, with a height from 50 μm to 150 μm and with a

diameter from 10 μm to 40 μm . The flared ends 16 have a diameter from 15 μm to 70 μm (p. 9, line 24 – p. 10, line 19; Figs. 1-6). The heads 16 are formed with slightly convex end surfaces 26 (p. 10, lines 13-16; Fig. 6).

Independent claim 34 recites a process for producing adhesion elements 16-18 on a substrate 10 (p. 6 lines 17-18; p. 7, lines 4-8 and 22-26, Figs. 1 and 3-6). The process comprises steps of introducing thixotropic plastic material of polyvinyl siloxane into mold cavities 12 in at least one shaping element 5 (p. 6, line 19 – p. 7, line 21; p. 9, lines 10-12; Fig. 1). Each of the mold cavities 12 has a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path (p. 7, lines 16-17; Fig. 2). Each convex path has a curvature with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end (p. 7, lines 22-26; Fig. 2). The plastic material is formed into at least 16,000 adhesion elements 16-18 with flared ends 16 per cm^2 accomplishing adhesion predominantly by van-der-Waals forces (p. 10, line 1-19; Figs. 1 and 3-6). The flared ends 16 are formed at the inner ends of the mold cavities, with the flared ends forming head 16 (p. 7, lines 9-21; Figs. 1-6). The adhesion elements have stem parts 17 with ends being formed at the outer ends of the mold cavities and being opposite the flared ends 16, with a height from 50 μm to 150 μm and with a diameter from 10 μm to 40 μm . The flared ends 16 have a diameter from 15 μm to 70 μm (p. 9, line 24 – p. 10, line 19; Figs. 1-6). The heads 16 are formed with end surfaces having a concavity (p. 8, lines 19-24, Fig. 5).

By performing the process in this manner, the adhesion elements are formed so as to adhere to other surfaces as a result predominantly of van-der-Waals forces, not by interlocking with mating adhesive elements in the nature of a hook-and-loop type fastener, also called a “Velcro” fastener. Such predominant adhesion by van-der-Waals forces is achieved without the

defibrillation of adhesion stems formed according to a biomedical model based on a geckos foot, and is made possible with the particular plastic material, shape, density and dimensions of the adhesion elements recited in claims 10, 22 and 34.

6. Grounds for Rejection to be Reviewed Upon Appeal

Claims 10, 16, 18, 22, 28, 30, 34, 40 and 42 as well as apparently claims 46-51 stand rejected under 35 U.S.C. §103 as being unpatentable over WO 03/099951 to Arzt in view of WO 2002/013647 to Tuma.

Claims 20, 32 and 44 stand rejected under 35 U.S.C. §103 as being unpatentable over Arzt publication in view of the Tuma publication when further considered in view of U.S. patent publication No. 2003/020888 to Fearing.

Claims 14, 26 and 38 stand rejected under 35 U.S.C. §103 as being unpatentable over the Arzt and Tuma publications, when further considered in view of U.S. patent publication No. 2005/0072509 to Full.

Claims 21, 23 and 45 stand rejected under 35 U.S.C. §103 as being unpatentable over the Arzt and Tuma publications, when further considered in view of U.S. Patent No. 7,018,496 to George.

7. Arguments

A. Rejections of Over Arzt and Tuma Publications

1. The Rejections

Claims 10, 16, 18, 22, 28, 30, 34, 40 and 42 as well as apparently claims 46-51 stand rejected under 35 U.S.C. §103 as being unpatentable over WO 03/099951 to Arzt in view of WO

2002/013647 to Tuma, with U.S. patent publications 2006/0005362 and U.S. Patent No. 7,198,743 used as translations thereof, respectively. The Arzt patent is cited for the use of polyvinyl siloxane (alleged to be inherently thixotropic) being molded to form adhesion elements with a density of 10^6 to 10^7 per cm^2 , having from 20000 nm to 200 micrometers and a diameter of 20 nanometers to 20 micrometers, having an end of at least 20 micrometers with shaped flared ends and having a contact end angle greater than 70 degrees. The Tuma patent is cited for having a shaping element with convex walls in the shape of a hyperboloid that allegedly would be obvious to use in the Arzt system. Relative to claims 46-51, the Tuma patent is cited as providing the curvature beginning at a 1/3 length portion.

2. Claim 10 Recites Patentably Distinguishable Adhesion Elements

Independent claim 10 is patentably distinguishable over the cited patent documents by (1) the use of thixotropic polyvinyl siloxane to form the adhesion elements, (2) the density of 16,000 elements per cm^2 , (3) the claimed dimensions of the adhesion elements and (4) the shape provided by the different radii of curvature of the mold cavity boundary walls, particularly in combination. Such features are not disclosed or rendered obvious by the cited documents.

Relative to the recitation of “polyvinyl siloxane”, Arzt U.S. publication paragraph 103 is cited. However, this paragraph does not specifically disclose a thixotropic polyvinyl siloxane as claimed. The other citations allegedly showing that polyvinyl siloxane is inherently thixotropic are not part of the rejection, and thus, cannot be relied on to support this rejection.

The claimed curvature shape is not disclosed or rendered obvious by the cited publications. This claimed curvature shape, disclosed in connection with Fig. 2, permits creating small lip head parts necessary to achieve high Van-der-Waals forces for adhesion purposes. This claimed unique combination of shape, materials, density and dimensions has been found to be

particularly effective for adhesion elements accomplishing adhesion by van-der-Waals forces. Additionally, the claimed features cannot properly be found obvious based on a combination of the cited publications.

Specifically, the cited Tuma publication relates only to an adhesive element having a hook or mushroom head for engagement with a corresponding or mating loop, hook or another mushroom head contacting the underside of the adhesive element. This Tuma publication does not relate to an adhesion element as claimed or as disclosed in the Arzt publication that can engage planar surfaces with the element free end surface by Van der Waals forces. These substantial differences in the problems, structures and operations of the adhesive elements of the cited Tuma publication and the adhesion elements of the Arzt publication demonstrate that one of ordinary skill in the art would not find using the Tuma publication curvature on the Arzt elements obvious to produce the claimed invention.

Claim 10 is additionally distinguishable by the heads being formed with essentially flat end surfaces. The claimed flat end surfaces are particularly effective in producing the adhesion effect by van-der-Waals forces. In contrast, the head part 16 of the Tuma publication, as shown in Fig. 3 thereof, has end surfaces on the head parts that are convex and that are not as effective as the planar or flat surfaces of claim 10 in producing adhesion by van-der-Waals forces.

Accordingly, claim 10 is patentably allowable over the Arzt and Tuma publications.

3. Claims Dependent Upon Claim 10

Claims 16, 18, and 46-47, being dependent upon claim 10, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents.

a. Claim 16

Claim 16 is further distinguishable by the hyperboloid shape, which is not shown to be obvious in connection with adhesion elements accomplishing adhesion predominately by van-der-Waals production in Fig. 7 of the Arzt publication.

b. Claim 18

Claim 18 is further distinguishable by the contact angle being greater than 70 degrees. That angle is not disclosed or rendered obvious for an adhesion element of the claimed shape.

c. Claim 46

Claim 46 is further distinguishable by the location of the different curvature portions along the lengths of the mold cavities, with the decreased radii of curvature beginning closer to the inner end than the outer end. That location is not disclosed or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

d. Claim 47

Claim 47 is further distinguishable by the beginning of the decreased radii of curvature being at the one-third length portion of a curvature length. That beginning is not described or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

4. Claim 22 Recites Patentably Distinguishable Adhesion Elements

Independent claim 22 is patentably distinguishable over the cited patent documents by (1) the use of thixotropic polyvinyl siloxane to form the adhesion elements, (2) the density of 16,000 elements per cm^2 , (3) the claimed dimensions of the adhesion elements and (4) the shape provided by the different radii of curvature of the mold cavity boundary walls, particularly in combination. Such features are not disclosed or rendered obvious by the cited documents.

Relative to the recitation of “polyvinyl siloxane”, Arzt U.S. publication paragraph 103 is cited. However, this paragraph does not specifically disclose a thixotropic polyvinyl siloxane as claimed. The other citations allegedly showing that polyvinyl siloxane is inherently thixotropic are not part of the rejection, and thus, cannot be relied on to support this rejection.

The claimed curvature shape is not disclosed or rendered obvious by the cited publications. This claimed curvature shape, disclosed in connection with Fig. 2, permits creating small lip head parts necessary to achieve high Van-der-Waals forces for adhesion purposes. This claimed unique combination of shape, materials, density and dimensions has been found to be particularly effective for adhesion elements accomplishing adhesion by van-der-Waals forces. Additionally, the claimed features cannot properly be found obvious based on a combination of the cited publications.

Specifically, the cited Tuma publication relates only to an adhesive element having a hook or mushroom head for engagement with a corresponding or mating loop, hook or another mushroom head contacting the underside of the adhesive element. This Tuma publication does not relate to an adhesion element as claimed or as disclosed in the Arzt publication that can engage planar surfaces with the element free end surface by Van der Waals forces. These substantial differences in the problems, structures and operations of the adhesive elements of the cited Tuma publication and the adhesion elements of the Arzt publication demonstrate that one of ordinary skill in the art would not find using the Tuma publication curvature on the Arzt elements obvious to produce the claimed invention.

Accordingly, claim 22 is allowable over the Arzt and Tuma publications.

5. Claims Dependent Upon Claim 22

Claims 28, 30 and 48-49, being dependent upon claim 22, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents.

a. Claim 28

Claim 28 is further distinguishable by the hyperboloid shape, which is not shown to be obvious in connection with adhesion elements accomplishing adhesion predominately by van-der-Waals production in Fig. 7 of the Arzt publication.

b. Claim 30

Claim 30 is further distinguishable by the contact angle being greater than 70 degrees. That angle is not disclosed or rendered obvious for an adhesion element of the claimed shape.

c. Claim 48

Claim 48 is further distinguishable by the location of the different curvature portions along the lengths of the mold cavities, with the decreased radii of curvature beginning closer to the inner end than the outer end. That location is not disclosed or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

d. Claim 49

Claim 49 is further distinguishable by the beginning of the decreased radii of curvature being at the one-third length portion of a curvature length. That beginning is not described or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

6. Claim 34 Recites Patentably Distinguishable Adhesion Elements

Independent claim 34 is patentably distinguishable over the cited patent documents by (1) the use of thixotropic polyvinyl siloxane to form the adhesion elements, (2) the density of 16,000 elements per cm², (3) the claimed dimensions of the adhesion elements and (4) the shape provided by the different radii of curvature of the mold cavity boundary walls, particularly in combination. Such features are not disclosed or rendered obvious by the cited documents.

Relative to the recitation of “polyvinyl siloxane”, Arzt U.S. publication paragraph 103 is cited. However, this paragraph does not specifically disclose a thixotropic polyvinyl siloxane as claimed. The other citations allegedly showing that polyvinyl siloxane is inherently thixotropic are not part of the rejection, and thus, cannot be relied on to support this rejection.

The claimed curvature shape is not disclosed or rendered obvious by the cited publications. This claimed curvature shape, disclosed in connection with Fig. 2, permits creating small lip head parts necessary to achieve high Van-der-Waals forces for adhesion purposes. This claimed unique combination of shape, materials, density and dimensions has been found to be particularly effective for adhesion elements accomplishing adhesion by van-der-Waals forces. Additionally, the claimed features cannot properly be found obvious based on a combination of the cited publications.

Specifically, the cited Tuma publication relates only to an adhesive element having a hook or mushroom head for engagement with a corresponding or mating loop, hook or another mushroom head contacting the underside of the adhesive element. This Tuma publication does not relate to an adhesion element as claimed or as disclosed in the Arzt publication that can engage planar surfaces with the element free end surface by Van der Waals forces. These substantial differences in the problems, structures and operations of the adhesive elements of the

cited Tuma publication and the adhesion elements of the Arzt publication demonstrate that one of ordinary skill in the art would not find using the Tuma publication curvature on the Arzt elements obvious to produce the claimed invention.

Claim 34 is additionally distinguishable by the heads being formed with a concavity end surfaces. The claimed concave surfaces are effective in producing the adhesion effect by van-der-Waals forces. In contrast, the head part 16 of the Tuma publication, as shown in Fig. 3 thereof, has end surfaces on the head parts that are convex.

Accordingly, claim 34 is allowable over the Arzt and Tuma publications.

7. Claims Dependent Upon Claim 34

Claims 40, 42, 50 and 51, being dependent upon claim 34, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents.

a. Claim 40

Claim 40 is further distinguishable by the hyperboloid shape, which is not shown to be obvious in connection with adhesion elements accomplishing adhesion predominately by van-der-Waals production in Fig. 7 of the Arzt publication.

b. Claim 42

Claim 42 is further distinguishable by the contact angle being greater than 70 degrees. That angle is not disclosed or rendered obvious for an adhesion element of the claimed shape.

c. Claim 50

Claim 50 is further distinguishable by the location of the different curvature portions along the lengths of the mold cavities, with the decreased radii of curvature beginning closer to

the inner end than the outer end. That location is not disclosed or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

d. Claim 51

Claim 51 is further distinguishable by the beginning of the decreased radii of curvature being at the one-third length portion of a curvature length. That beginning is not described or rendered obvious for adhesion elements accomplishing adhesion predominantly by van-der-Waals forces.

B. Rejections over Arzt and Tuma Publications with Fearing Publication

1. The Rejections

Claims 20, 32 and 44 stand rejected under 35 U.S.C. §103 as being unpatentable over Arzt publication in view of the Tuma publication when further considered in view of U.S. patent publication No. 2002/020888 to Fearing. The Fearing publication is cited for allegedly teaching optimizing the size, stiffness, adhesive force and packing density of the microstructures. In support of the rejection, it is alleged that it would be obvious to provide the optimized results claimed.

2. The Claims

Claims 20, 32 and 44, being dependent upon claims 10, 32, and 34, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited publications.

a. Claim 20

Claim 20 is further distinguishable by the specific dimensions of the head adhesion elements so as to provide adhesion predominantly by van-der-Waals forces, which specific dimensions are not disclosed or rendered obvious by the Fearing publication.

b. Claim 32

Claim 32 is further distinguishable by the specific dimensions of the head adhesion elements so as to provide adhesion predominantly by van-der-Waals forces, which specific dimensions are not disclosed or rendered obvious by the Fearing publication.

c. Claim 44

Claim 44 is further distinguishable by the specific dimensions of the head adhesion elements so as to provide adhesion predominantly by van-der-Waals forces, which specific dimensions are not disclosed or rendered obvious by the Fearing publication.

C. Rejections over Arzt and Tuma Publications with Full Publication

1. The Rejections

Claims 14, 26 and 38 stand rejected under 35 U.S.C. §103 as being unpatentable over the Arzt and Tuma publications, when further considered in view of U.S. patent publication No. 2005/0072509 to Full. The Full publication is cited for the use of an imprinting roller to achieve the desired mold cavities per cm^2 .

2. The Claims

Claims 14, 26 and 38 being dependent upon claims 10, 22 and 34, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited publications.

a. Claim 14

Claim 14 is further distinguishable by the screen having at least 16,000 mold cavities per cm^2 . That feature is not rendered obvious in the claimed combination by the Full publication.

b. Claim 26

Claim 26 is further distinguishable by the screen having at least 16,000 mold cavities per cm². That feature is not rendered obvious in the claimed combination by the Full publication.

c. Claim 38

Claim 38 is further distinguishable by the screen having at least 16,000 mold cavities per cm². That feature is not rendered obvious in the claimed combination by the Full publication.

D. Rejections over Arzt and Tuma Publications with George Patent

1. The Rejections

Claims 21, 33 and 45 stand rejected under 35 U.S.C. §103 as being unpatentable over the Arzt and Tuma publications, when further considered in view of U.S. Patent No. 7,018,496 to George. The George patent is cited for thermosetting compositions mixed with thermoplastic compositions and crosslinked to achieve an adhesion element.

2. The Claims

Claims 21, 33 and 45 being dependent upon claims 10, 22 and 34, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them of the cited publications and patent.

a. Claim 21

Claim 21 is further distinguishable by crosslinking of the plastic material. Crosslinking of the plastic material for adhesion elements accomplishing adhesion predominately by van-der-Waals forces is not rendered obvious by the George patent since it does not use polyvinyl siloxane.

b. Claim 33

Claim 33 is further distinguishable by crosslinking of the plastic material. Crosslinking of the plastic material for adhesion elements accomplishing adhesion predominately by van-der-Waals forces is not rendered obvious by the George patent since it does not use polyvinyl siloxane.

c. Claim 45

Claim 45 is further distinguishable by crosslinking of the plastic material. Crosslinking of the plastic material for adhesion elements accomplishing adhesion predominately by van-der-Waals forces is not rendered obvious by the George patent since it does not use polyvinyl siloxane.

When no reference discloses a feature of a claim relied on to distinguish the prior art, there can be no suggestion to modify the prior art to contain that feature. In re Civitello, 339 F.2d 243, 144 USPQ 10 (C.C.P.A. 1964). As stated in W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 220 USPQ 303, 311 (Fed. Cir. 1983), there must be something in the teachings of the cited patents to suggest or to provide a reason to one skilled in the art that the claimed invention would be obvious.

Despite the simple concept of the invention, the Examiner has the burden of finding “the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of [the] invention to make the combination in the manner claimed.” See In re Werner Kotzab, 217 F.3d 1365, 1371, 55 USPQ 2d 1313, 1318 (Fed. Cir. 2000). Here, the necessary factual findings are missing, rendering the rejection untenable.

The Examiner, in this situation has not pointed to any specific principle or motivation in the prior art that would lead one skilled in the art to arrive at the invention as claimed. “[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.” In re Werner Kotzab, 217 F.3d at 1371, 55 USPQ 2d at 1318. If no particular finding can be made as to the reason one skilled in the art would have used the features of the Tuma publication in the Arzt method to produce the claimed invention, the Examiner cannot properly hold the claimed invention obvious.

The Examiner is using the Examiner’s knowledge of the invention, in hindsight, to conclude improperly that one skilled in the art would have found it obvious to make the proposed combinations and modifications. However, such “hindsight reconstruction” is impermissible in

reaching a finding of obviousness. See, e.g., W. L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983).

8. Conclusion

In view of the foregoing, the rejections of claims 10, 14, 16, 18, 20-22, 26, 28, 30, 32-34, 38, 40, 42 and 44-51 under 35 U.S.C. §103 are untenable, and a decision reversing those rejections is requested.

Respectfully submitted,



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Dated: January 25, 2011

APPENDIX A – COPY OF CLAIMS ON APPEAL

10. A process for producing adhesion elements on a substrate, comprising the steps of:

introducing thixotropic plastic material of polyvinyl siloxane having a contact angle greater than 60 degrees due to surface energy for wetting with water into mold cavities in at least one shaping element, each of the mold cavities having a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path, each convex path having a curvature with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end; and

forming the plastic material into at least 16,000 adhesion elements with flared ends per cm^2 accomplishing adhesion predominantly by van-der-Waals forces at the inner ends of the mold cavities, the flared ends forming heads with essentially flat end surfaces, the adhesion elements having stem parts with ends being formed at the outer ends of the mold cavities and being opposite the flared ends, with a height from 50 μm to 150 μm and with a diameter from 10 μm to 40 μm , the flared ends having a diameter from 15 μm to 70 μm .

14. A process according to claim 10 wherein the shaping element is a drum-shaped screen having at least 16,000 mold cavities per cm^2 .

16. A process according to claim 14 wherein each of the mold cavities has a hyperboloid shape.
18. A process according to claim 10 wherein the contact angle is greater than 70 degrees.
20. A process according to claim 10 wherein the height of the stems is approximately 90 μm ; the diameter of the stems is approximately 30 μm ; and the diameter of the flared end is approximately 50 μm .
21. A process according to claim 10 wherein the plastic material is cross-linked with or after molding of the adhesion elements.
22. A process for producing adhesion elements on a substrate, comprising the steps of:
- introducing thixotropic plastic material of polyvinyl siloxane having a contact angle greater than 60 degrees due to surface energy for wetting with water into the mold cavities in at least one shaping element, each of the mold cavities having a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path, each convex path having a curvature with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end; and

forming the plastic material into at least 16,000 adhesion elements with flared ends per cm^2 accomplishing adhesion predominantly by van-der-Waals forces at the inner ends of the mold cavities, the flared ends forming heads with slightly convex end surfaces, the adhesion elements having stem parts with ends being formed at the outer ends of the mold cavities and being opposite the flared ends, with a height from 50 μm to 150 μm and with a diameter from 10 μm to 40 μm , the flared ends having a diameter from 15 μm to 70 μm .

26. A process according to claim 22 wherein
the shaping element is a drum-shaped screen having at least 16,000 mold cavities per cm^2 .

28. A process according to claim 26 wherein
each of the mold cavities has a hyperboloid shape.

30. A process according to claim 22 wherein
the contact angle is greater than 70 degrees.

32. A process according to claim 22 wherein
the height of the stems is approximately 90 μm ;
the diameter of the stems is approximately 30 μm ; and
the diameter of the flared end is approximately 50 μm .

33. A process according to claim 22 wherein

the plastic material is cross-linked with or after molding of the adhesion elements.

34. A process for producing adhesion elements on a substrate, comprising the steps of:

introducing thixotropic plastic material of polyvinyl siloxane having a contact angle greater than 60 degrees due to surface energy for wetting with water into mold cavities in at least one shaping element, each of the mold cavities having a circumferential boundary wall extending in a lengthwise direction thereof continuously along a convex path, each convex path having a curvature with decreased radii of curvature adjacent an inner end and increased radii of curvature adjacent an outer end; and

forming the plastic material into at least 16,000 adhesion elements with flared ends per cm^2 accomplishing adhesion predominantly by van-der-Waals forces at the inner ends of the mold cavities, the flared ends forming heads with end surfaces having a concavity, the adhesion elements having stem parts with ends being formed at the outer ends of the mold cavities and being opposite the flared ends, with a height from 50 μm to 150 μm and with a diameter from 10 μm to 40 μm , the flared ends having a diameter from 15 μm to 70 μm .

38. A process according to claim 34 wherein

the shaping element is a drum-shaped screen having at least 16,000 mold cavities per cm^2 .

40. A process according to claim 38 wherein each of the mold cavities has a hyperboloid shape.
42. A process according to claim 34 wherein the contact angle is greater than 70 degrees.
44. A process according to claim 34 wherein the height of the stems is approximately 90 μm ; the diameter of the stems is approximately 30 μm ; and the diameter of the flared end is approximately 50 μm .
45. A process according to claim 34 wherein the plastic material is cross-linked with or after molding of the adhesion elements.
46. A process according to claim 10 wherein the curvature with the decreased radii of curvature has a beginning closer to the inner end than the outer end.
47. A process according to claim 46 wherein the beginning is at a one-third length portion of a curvature length.

48. A process according to claim 22 wherein
the curvature with the decreased radii of curvature has a beginning closer to the inner end
than the outer end.

49. A process according to claim 48 wherein
the beginning is at a one-third length portion of a curvature length.

50. A process according to claim 34 wherein
the curvature with the decreased radii of curvature has a beginning closer to the inner end
than the outer end.

51. A process according to claim 50 wherein
the beginning is at a one-third length portion of a curvature length.

APPENDIX B – EVIDENCE

None

APPENDIX C – RELATED PROCEEDINGS

None